VIII. "Evaporation and Dissociation. Part VIII. A Study of the Thermal Properties of Propyl Alcohol." By WILLIAM RAMSAY, Ph.D., F.R.S., and SYDNEY YOUNG, D.Sc. Received June 14, 1888.

(Abstract.)

In continuation of our investigations of the thermal properties of pure liquids, we have now determined the vapour-pressures, vapour-densities, and expansion in the liquid and gaseous states of propyl alcohol, and from these results we have calculated the heats of vaporisation at definite temperatures. The compressibility of the liquid has also been measured. The range of temperature is from 5° to 280° C., and the range of pressure from 5 mm. to 56,000 mm.

The memoir contains an account of the purification of the propyl alcohol; determinations of its specific gravity at 0°, and at 10°·72; and of the constants mentioned above.

The approximate critical temperature of propyl alcohol is 263°·7; the approximate critical pressure is 38,120 mm., and the approximate volume of one gram is 3·6 c.c. The first two of these constants must be very nearly correct; the third cannot be determined with the same degree of precision.

The memoir is accompanied by plates, showing the relations of volume, temperature, and pressure in a graphic form.

IX. "Contributions to the Chemistry of Chlorophyll. No. III." By EDWARD SCHUNCK, F.R.S. Received June 19, 1888.

(Abstract.)

This paper is a continuation of the previous ones on the same subject. In it the author gives an account of the action of alkalis on phyllocyanin so far as regards the first stage of the process, and of the products thereby formed. Phyllocyanin when acted upon by alkalis yields in the first instance a well-crystallised substance of a peacock- or steel-blue colour, to which he gives the name of *Phyllotaonin*. He describes its properties and those of some of its compounds. When hydrochloric acid gas in excess is passed through a solution of chlorophyll in alcoholic soda, a compound crystallising in lustrous purple needles is formed, which seems to be the ethyl ether of phyllotaonin. By substituting methylic for ethylic alcohol a very similar compound is obtained, which the author considers to be the corresponding methyl ether. Though these compounds readily yield phyllotaonin by saponification with alcoholic potash or soda, the author did not succeed in reproducing them by the combined action of alcohol and hydrochloric acid on phyllotaonin.